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| PHILIPS INTELLECTUAL PROPERTY & STANDARDS 595 MINER ROAD CLEVELAND, OH 44143 | | | EXAMINER VARGAS, DIXOMARA | |
| | | | ART UNIT 2859 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/573,729

Applicant(s)

GLEICH ET AL.

Examiner

Dixomara Vargas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application
- ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 4, 6-7, 9 and 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Keilman et al. (US 6,231,516 B1).

With respect to claim 1, Keilman discloses a transmission cable, for use in a magnetic resonance apparatus, the transmission cable comprising (Figures 19A-19D): a plurality of cable segments (RF coil segments #223A); and a plurality of electroacoustic couplers for providing electrical connection between segments (ultrasonic and electrical transducer sensor #220).

3. With respect to claims 2 and 7, Keilman discloses a first mixer disposed at a first end of the cable for shifting a signal frequency associated with the electroacoustic couplers (Column 11, lines 5-34).

4. With respect to claims 4 and 9, Keilman discloses each cable segment comprises a first conductor and a second conductor and each of the first and second conductors is connected to at least one electroacoustic coupler (Figure 19D, RF conductors #223A are connected through transducers #220).

5. With respect to claim 6, Keilman discloses an MR apparatus comprising: a first magnet system for generating a main magnetic field in an examination region (Column 38, lines 29-32);

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an RF coil disposed in the examination region for transmitting and/or receiving RF signals to and/or from the examination region (RF coil #223A); and a plurality of transmission cables for carrying signals with the MR system, at least one of the transmission cables comprising a plurality of cable segments (RF coil segments #223A) and a plurality of electroacoustic couplers for coupling adjacent cable segments (ultrasonic and electrical transducer sensor #220).

6. With respect to claim 11, Keilman discloses a transmission cable for use in a magnetic resonance apparatus, the transmission cable comprising (Figures 19A-19D): a plurality of cable segments (RF coil segments #223A); and a plurality of couplers each of which transforms a first signal carried by a first cable segment into an acoustic signal and from the acoustic signal into a second signal carried by a second cable segment (ultrasonic and electrical transducer sensor #220).

7. With respect to claim 12, Keilman discloses each coupler has high impedance (Columns 34-35, lines 64-67 and 1-10 respectively) for a common mode wave on the cable (Columns 27-28, lines 38-67 and 1-5 respectively).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

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claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 3, 8 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keilman et al. (US 6,231,516 B1).

With respect to claims 3, 8 and 13, Keilman discloses a mixer disposed at a second end of the cable for shifting a signal frequency associated with the electroacoustic couplers (Column 11, lines 35-46; Figure 4, elements #50). Also Keilman discloses the claimed invention as stated above except for a second mixer since Keilman simplifies the structure by using one mixer with multiple connections, one for each transducer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have more than one mixer, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

11. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keilman et al. (US 6,231,516 B1) in view of Wilk (US 6,319,201 B1).

With respect to claims 5 and 10, Keilman discloses the claimed invention as stated above in paragraph 8 except for specifying the transducer structure (considered to be the electroacoustic means) wherein each electroacoustic coupler comprises: a substrate; a first set of conductive fingers disposed on the substrate; and a second set of conductive fingers disposed on the substrate whereby an acoustic signal is passed from the first set of conductive fingers to the

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second set of conductive fingers. However, Wilk discloses the transducer structure (considered to be the electroacoustic means) wherein each electroacoustic coupler comprises: a substrate; a first set of conductive fingers disposed on the substrate; and a second set of conductive fingers disposed on the substrate whereby an acoustic signal is passed from the first set of conductive fingers to the second set of conductive fingers (Columns 3-4, lines 59-65 and 1-18 respectively; Figure 20, electroacoustic means #352 in substrate #350). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the transducer's structure as shown by Wilk with Keilman's transmission cable for the purpose of obtaining a compact, lightweight and portable configuration in an imaging device as taught by Wilk (Column 3, lines 59-65).

Response to Arguments

12. Applicant's arguments filed 07/30/07 have been fully considered but they are not persuasive.
13. Applicant argues that Keilman does not teach or suggest electroacoustic couplers for providing electrical connection between segments.
14. The examiner disagrees with applicant's argument because Keilman discloses (as seen on Figures 19A-19C) coil segments #223 being electrically connected through wires #225 and transducers #220 in the IC sensor wherein the transducers are electroacoustical devices (Columns 8-9, lines 59-67 and 1-5 respectively). Therefore, said transducers are performing a coupling function between the RF coil segments (Column 28, lines 39-51).

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15. Applicant argues that Keilman fails to teach or fairly suggest a first magnet system for generating a main magnetic field in an examination region.

16. The examiner disagrees with applicant's argument because Keilman discloses a permanent magnet #311, in Figure 25, that may be included to provide a static magnetic field in the examination region which is the known main magnetic field in the examination region in an MR system (Column 38, lines 29-32).

Conclusion

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dixomara Vargas whose telephone number is (571) 272-2252. The examiner can normally be reached on Monday to Thursday from 8:00 am. to 4:30 pm..

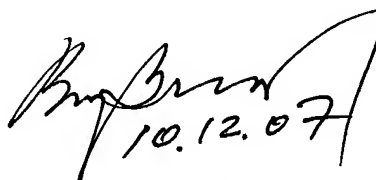
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean A. Reichard can be reached on (571) 272-1984. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Dixomara Vargas
Patent Examiner
Art Unit 2859



BRIJ SHRIVASTAV
PRIMARY EXAMINER